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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
JEAN-CHRISTOPHE GIRON, ET AL. : EXAMINER: NELSON, M.
SERIAL NO: 10/564,501 :
FILED: JULY 5, 2006 : GROUP ART UNIT: 1794
FOR: FUNCTIONALIZED SECURITY :
GLAZING

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

In accordance with 35 U.S.C. § 134, that the claims of the present application have been twice rejected, this brief is submitted in response to the rejection dated January 29, 2010 (“Action”).

REAL PARTY OF INTEREST

The real party of interest is Saint Gobain Glass, France.

RELATED APPEALS AND INTERFERENCES

To the best of Appellants' knowledge, there are no other appeals or interferences which will directly affect or be directly affected by, or have a bearing on, the Board's decision in this appeal.

STATUS OF CLAIMS

Claims 1-18, 21 and 22 are active.

Claims 1-18, 21 and 22 are rejected.

Claims 1-18, 21 and 22 are appealed.

Claims 19, 20, and 23 were cancelled.

The appealed claims are presented in Appendix I.

STATUS OF AMENDMENTS

No outstanding amendments are present in this case a.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention claimed in the pending, rejected and appealed independent claim 1 with reference to exemplary support in the originally filed application is:

A glazing assembly, comprising:

a first rigid upper substrate with a solar protective layer *page 16* positioned on the outer face of the first rigid protective layer that faces outside towards the sun; *FIGs 2, 3 and 6, page 5 a first rigid substrate (S1);*

at least one active system positioned on the inner face of the first rigid substrate, the at least one active system comprising a multilayer, comprising at least one thin film; *FIGs. 2, 3 and 6, pages 6-7 at least one active system (3) at least one thin film and placed between the substrates (S1 and S2)*

a second rigid lower substrate positioned below the at least one active system; and *FIGs. 2, 3 and 6, pages 6-7*

at least one polymer film positioned between the active system and the second rigid substrate, the polymer film comprising a function of retaining fragments of the glazing assembly should the glazing assembly break. *FIGs. 2, 3 and 6, pages 6-7 at least one polymer film (f1)*

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The first ground of rejection to be reviewed on appeal is whether Claims 1-11, 15-18, 21 and 22 are properly rejected under 35 U.S.C. § 103(a) in view of Giron *et al*(WO2002/006889) relying on U.S. PG PUB 2004/0053125 (hereinafter “Giron”) in view of Barth *et al* (U.S. patent no. 6,294,233, “Barth”).

The second ground of rejection to be reviewed on appeal is whether Claims 12-14 are properly rejected under 35 U.S.C. § 103(a) in view of Giron and Barth, as applied to Claims 1 and 11, further in view of Johnson *et al*(U.S. patent no. 6,284,360, “Johnson”).

ARGUMENT

I. The rejection combining Giron and Barth

The Examiner finds that Giron teaches a glazing assembly citing paragraphs [0020]-[0024], [0024] and [0025]. Action at page 3.

The Examiner concedes that Giron does not teach an additional solar protective layer (as recited in Claim 1) and thus Barth is cited because “Barth et al., which is also directed towards optically functional glass based panels, were known to those having ordinary skill at the time of the invention. . .” concluding that “it would have been obvious to have provided one of the solar protective films of Barth et al. to the outer surface of the substrates of the panel of Giron et al. in order to improve the protection from solar radiation.” Action at page 4.

The Examiner concedes that the claims require a specific orientation to each other and to the exterior when the glazing is applied based on the limitation in Claim 1 that recites “faces outside towards the sun” but nonetheless concludes that it would have been “obvious to have applied the glazing of Giron et al. in both orientations. . .” Action at page 4.

In the section entitled “Response to Arguments,” the Examiner effectively summarizes the rejection in that:

Giron does not require nor teach away from the orientation of the layers.

It would have been obvious to flip the orientation of the Giron stack as there is only two possibilities.

The results that have been presented by the present Applicants would have been reasonably predictable as those effects and the benefits of the invention are alleged to naturally flow from flipping the Giron stack.

See Action at pages 8-10.

Applicants respectfully submit that the conclusions are neither supported and rather are erroneous. Conclusions of obviousness based on clearly erroneous findings, as is here the case, cannot stand. *Alza Corp. v. Mylan Labs., Inc.*, 464 F.3d 1286, 1289 (Fed. Cir. 2006).

Notably, the rejection does not take into consideration the fact that Giron does teach how the glazing should be applied and there is simply no basis to conclude it would have been obvious to flip the orientation but for hindsight reconstruction of the claims. See *In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (“ ‘The factual inquiry whether to combine references must be thorough and searching.’ ...It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with.”). Indeed, as Applicants explain below, one would not have repositioned the Giron layers.

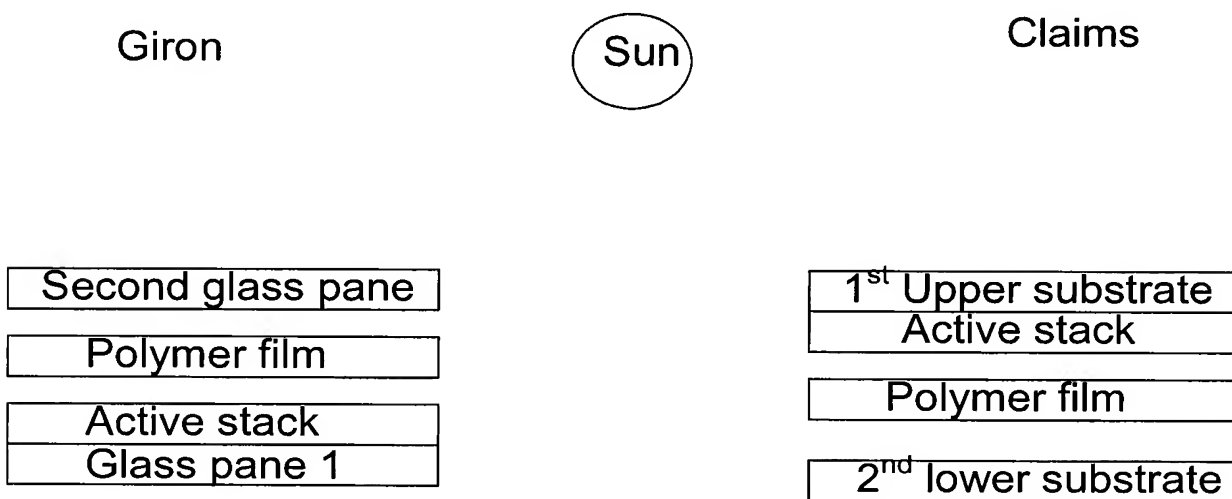
As explained in Applicants prior reply, as apparent from the claims, the claims of this application are directed to glazings (e.g., made of glass) that incorporate a polymer film that functions to contain fragments if broken (see the Background portion of the application at pages 1-2). In addition, functional or active system layers were known to be provided in glazing arrangements. In particular, it is true that Giron describes such electrochromic active systems in glazing arrangements with polymer protective layers. While it is recognized the citations in paragraphs [0022], [0024], [0025], [0079], and [0080] of the prior Giron application are relevant to the claims here, Giron does not actually describe what is claimed (in the original claims examined nor that which is presented here).

That is, contrary to the conclusion in the rejection the Giron application does not describe the arrangement that is defined in the claims, i.e., the active system on to the inner face (2) of substrate (S1) and then with the protective polymer layer (f1).

Giron's arrangement described on page 5, [0080] requires in this order (from bottom up)

- a.. A glass pane 1 (which corresponds to the second rigid lower substrate)
- b.. An active stack positioned above the glass pane 1, i.e., the active stack is positioned on the inner face of the lower glass pane)
- c.. A film of EVA or PU in which the upper conductive layer of the active system is embedded.
- d.. A second glass substrate "above the EVA film" which corresponds to the upper first rigid substrate in the claims

Thus, the positional relationship of each of the layers as described by Giron and defined in the present claims can be schematically diagramed as follows, using the positional relationship to the sun as per the figures of the present application:



The Examiner committed the first reversible error regarding the Examiner's first point that Giron does not preclude the positional relationship defined in the claims. Paragraph [0080] of Giron makes is quite clear how each of the layers is positioned, one above another. Paragraph [0080] is provided below with emphasis added to highlight these points:

[0080] All the figures show a **glass pane 1**, provided with a lower conductive layer 2, **an active stack 3, surmounted by an upper conductive layer**, a network of conductive wires 4 **above the upper conductive layer and embedded in the surface** of an ethylene vinyl acetate EVA (or polyurethane) **film** which is not shown for increased clarity. The glazing also comprises a **second glass pane**, not shown for further clarity, **above the EVA film 5**. The two glass panes and the EVA film are secured by a known lamination or calendering technique, by heating, possibly under pressure.

The placement of the EVA film on the active system but below the second rigid substrate is viewed by the language "embedded in the surface. . ." in paragraph [0080].

Paragraph [0021] of t Giron states (emphasis added):

In the sense of the invention, the term "lower" electrode refers to the electrode which is closest to **the carrier substrate taken as a reference**, on which at least part of the active layers (all the active layers in an "all-solid" electrochromic system) is arranged. The "upper" electrode is the one placed on the other side, **with respect to the same reference substrate**.

Paragraph [0023] of Giron states (emphasis added):

Generally, the electrodes are transparent. However, one of them may be opaque if the glazing operates not in transmission but in reflection (mirror). [0024] **The active system and the upper electrode are generally protected by another substrate of the rigid type**, possibly a laminate including one **or more thermoplastic polymer films of the EVA (ethylene vinyl acetate), PVB (polyvinyl butyral) or PU (polyurethane) type**

Thus, it is clear from Giron that the electrochromic stack or system is deposited on the carrier substrate or the lower second substrate as defined in the claims, which is laminated together with a thermoplastic polymer film and a second substrate (called a protective substrate). Finally, one of ordinary skill would deduce of this assembly, that the electrochromic system is deposited in face 3 of the substrate (2), this substrate (2) being the carrier substrate, and the protective substrate being the substrate (1). In this configuration, if the substrate (1) is broken, the thermoplastic polymer is not able to keep together the

electrochromic stack and the carrier substrate (2), this substrate (2) with the stack can fall down in the user.

The specification discusses this configuration as prior art (see pages 5 and 6):

In general, the active system is incorporated on face 3 of the substrate assembly before the lamination operation and after the bending and/or toughening operation (when, of course, the substrates have to undergo a bending and/or toughening operation).

However, the incorporation of an active system on face 3 of a laminated substrate, the substrates of which have individually undergone a bending operation, generates other drawbacks that the present invention aims to remedy.

This is because incorporation of the active system on face 3 of the assembly is in fact carried out on that face of the second substrate which has been in contact with the members that have caused the bending. As a consequence of this contact between the members needed for the bending operation and that face of the substrate in question, surface defects are inevitably created on the face of the substrate in question.

These surface defects may result in delamination problems at the interface between the active system and face 3 of the substrate, this delamination possibly resulting in irreversible deterioration of the complete glazing assembly”

The present invention therefore aims to alleviate these drawbacks by proposing a glazing assembly containing an active system of simplified structure.

Thus, it should be readily apparent that in the claimed invention, the configuration is totally different. The electrochromic stack is deposited on the face 2 of the substrate (1) “position on the inner face of the first rigid substrate.” Whereas the carrier substrate (2) and the substrate (1) with the stack are laminated together with the polymer interlayer.

This is consistent with the way the invention is described on page 5 of the present application.

The Examiner's second reversible error relates to the Examiner's second point that it would have been obvious to flip the orientation of Giron's arrangement to arrive at the arrangement of the present claims.

The cited Giron disclosure, noting that the publication is by the same Giron in the present application, teaches a quite definitive arrangement as reflected by the placement of various panes of glass, active stack and film in relation to each other. Giron, e.g., in paragraph [0080], uses the conventional terminology, upper, lower, above, below as is understood in the relevant field at the time of the present invention, relative to the orientation of the sun-the upper layer being closest or positioned towards the sun, with the lower layer positioned away from the sun and towards the inside of where it is installed. Indeed this is described as such in the specification, paragraph bridging pages 4-5 and the paragraph bridging pages 5-6. Therefore, the orientation would not be flipped because the cited Giron publication states a particular orientation, where the active stack is attached to the inner face of the lower glass pane (termed glass pane 1 in Giron).

Indeed, contrary to the Examiner's conclusions, starting from Giron, the person skilled in the art would rather have put the active system on face 3 for several reasons:

1. If the active system is on face 3, it is possible to provide outside substrate S1 with protective layers on the inside (on face 2). Such layers are for example provided for filtering UV light and thus protecting the active system which is on face 3.
2. Positioning the active system on face 3 thus makes it possible to protect the active system "upstream" of the active system.
3. Positioning on face 3, also makes it possible to combine substrate S2 provided with active system to different standard kinds of substrate S1: the active system being on face 3, it will be possible, during the fabrication process, to combine substrate S2 with

the active system deposited thereon with a thicker or thinner outside substrate when required.

As a consequence, should the person skilled in the art not have realized that placing the substrate on face 3 has the disadvantages explained in the specification concerning delamination, one would not have placed it on face 2 but on face 3. It had not been realized at the time that placing the active system on face 2 would allow bending of the glazing, contrary to placing it on face 3. If placed on face 3, it has been realized that bending of the substrate would generate delamination (see page 6 of the present application).

It would not have been obvious for the person skilled in the art, starting from Giron, to place the active system on face 3, but certainly not on face 2. This is particularly true for a curved substrate, such as that defined in dependent claim 21, which is separately patentable because how and why would one flip the orientation as alleged in the rejection, when the particular orientation is mandated by the curvature of the substrate?

Further, the orientation that is defined in the claims provides advantages over and above that which is described by Giron. That is, with the active system specifically placed on face 2 (inner face) of the first substrate, the problems (delamination, defects on the face, see page 6, 1st ¶) of the earlier methods were resolved (see page 6, lines 23-24 of the specification). In addition, as the active layer is positioned on face 2 (of the first rigid substrate), before the polymer layer which yields a laminated device with the second substrate, less heat transfer inside the place where the glazing assembly is positioned, e.g., inside the car when the glazing is part of a sunroof (see Claim 17). This is because even with the solar protective layer, the active layer continues to absorb infrared wavelengths. The polymer layer positioned between the active layer and the second rigid lower substrate acts like a barrier against this heat. If the active layer is positioned on face 3 of the laminated

glazing, i.e., the inner face of the lower substrate as described by Giron and after the thermoplastic layer, this improvement is not possible.

The Examiner continues to misapprehend the evidentiary effect of unexpected results. In his understanding, if he believes that she has made a *prima facie* case, no results provided by the invention could possibly be unexpected because it would have been obvious to flip the stack and the results “would be realized by one having ordinary skill in the art through the obvious adjustment of the orientation of the stack of Giron” (Official Action at page 10). This is the third reversible error upon which the rejection should be overturned.

It is legal error for the Office to dismiss a showing of unexpected results as flowing from or inherent in the Examiner’s prior art construct. As stated in *In re Sullivan*, 84 USPQ2d 1034 (Fed. Cir. 2007):

It is well settled that the PTO “bears the initial burden of presenting a *prima facie* case of unpatentability... . However, when a *prima facie* case is made, the burden shifts to the applicant to come forward with evidence and/or argument supporting patentability.” *In re Glaug*, 283 F.3d 1335, 1338 (Fed. Cir. 2002). Rebuttal evidence is “merely a showing of facts supporting the opposite conclusion.” *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). Evidence rebutting a *prima facie* case of obviousness can include: “evidence of unexpected results,” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1369 (Fed. Cir. 2007), evidence “that the prior art teaches away from the claimed invention in any material respect,” *In re Peterson*, 315 F.3d 1325, 1331 (Fed. Cir. 2003), and evidence of secondary considerations, such as commercial success and long-felt but unresolved needs, *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999). When a patent applicant puts forth rebuttal evidence, the Board must consider that evidence. *See In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995) (stating that “all evidence of nonobviousness must be considered when assessing patentability”); *In re Sernaker*, 702 F.2d 989, 996 (Fed. Cir. 1983) (“If, however, a patent applicant presents evidence relating to these secondary considerations, the board must always consider such evidence in connection with the determination of obviousness.”).

Rather than considering Applicants’ showing of unexpected results as rebuttal evidence to an alleged *prima facie* case, the Examiner has dismissed it and, in fact, has

clearly convinced himself that unexpected results cannot exist when he thinks she has made a *prima facie* case. This is clear legal error.

In addition to their showing that there is no *prima facie* case, Applicants have shown an unexpected improvement. The Examiner has put forth no reasoning that would support a conclusion that, *looking forward*, such an improvement would have been expected from the combination of Giron and Barth. Rather, the Examiner looks backwards and concludes that because it is his opinion that the references present a *prima facie* case any property, benefit, or characteristic of the invention Applicant wishes to discuss in rebuttal is meaningless. This is completely improper and, at best, is a classic case of requiring comparison of the results of the invention with the results of the invention. See MPEP 716.02(e) and *In re Chapman*, 357 F.2d 418, 148 USPQ 711 (CCPA 1966).

As Barth is relied upon primarily to teach the inclusion of a solar protective layer but does not in any way suggest the claimed orientation nor does Barth provide teachings to reverse the orientation of the layers of Giron, the combination of Barth and Giron cannot render the claims obvious.

II. The rejection combining Giron, Barth and Johnson

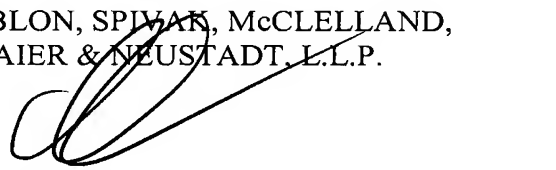
Johnson is cited to allege that the features of claims 12-14 were known and thus when combined with the Giron (and Barth) assembly renders those claims obvious. Action at page 7 However, as explained above, the arrangement where the active system on to the inner face (2) of substrate (S1) and then with the protective polymer layer (f1) is not obvious in view of Giron and/or Barth. Johnson neither describes nor suggests the arrangement defined by the claims. As a result, the combination of Giron, Barth, and Johnson does not teach or suggest of the limitations of the claims.

III. Conclusion

For the reasons stated in this Brief, Appellants respectfully request that the Examiner's rejections be withdrawn with direction to allow all of the claims pending in this application and pass this case to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, L.L.P.

A handwritten signature in black ink, appearing to read 'Daniel J. Pereira', is written over a horizontal line.

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APPENDIX 1 (CLAIMS)

Claim 1 (Rejected): A glazing assembly, comprising:

a first rigid upper substrate with a solar protective layer positioned on the outer face of the first rigid protective layer that faces outside towards the sun;

at least one active system positioned on the inner face of the first rigid substrate, the at least one active system comprising a multilayer, comprising at least one thin film;

a second rigid lower substrate positioned below the at least one active system; and

at least one polymer film positioned between the active system and the second rigid substrate, the polymer film comprising a function of retaining fragments of the glazing assembly should the glazing assembly break.

Claim 2 (Rejected): The glazing assembly according to claim 1, wherein the active system comprises an electrically controllable system comprising variable optical properties, variable energy properties, or a combination thereof, wherein the electrically controllable system is at least one system selected from the group consisting of an electrochromic system, an optical valve, a viologen-based system, a liquid-crystal system, and an electroluminescent system.

Claim 3 (Rejected): The glazing assembly according to claim 1, wherein the active system comprises a thin film or a thin-film multilayer with a thermal function, of the low-emissivity or solar-protection type, an acoustic function, of the acoustic attenuation coating type, or an optical function, of the decorative or absorbent, thermochromic or thermotropic type.

Claim 4 (Rejected): The glazing assembly according to claim 1, wherein the substrates and are made of glass.

Claim 5 (Rejected): The glazing assembly according to claim 1, wherein the total thickness (e_{1+2}) of the substrates and of all the materials placed between them is less than or equal to 8 mm.

Claim 6 (Rejected): The glazing assembly according to claim 1, wherein the total thickness (e_{1+2}) of the substrates and of all the materials placed between them is less than or equal to 30 mm.

Claim 7 (Rejected): The glazing assembly according to claim 1, wherein the substrates and have substantially identical shapes and substantially identical dimensions.

Claim 8 (Rejected): The glazing assembly according to claim 1, wherein the substrates and have different dimensions and substantially identical shapes.

Claim 9 (Rejected): The glazing assembly according to claim 1, wherein the glazing assembly further comprises an opacifying peripheral coating, wherein the opacifying peripheral coating is of a screen-printed type, and wherein the opacifying peripheral coating is applied to at least one part of the glazing assembly selected from the group consisting of around the periphery of an inside face of the first substrate, around the periphery of an outside face of the second substrate, and around the periphery of an inside face of the second substrate.

Claim 10 (Rejected): The glazing assembly according to claim 1, wherein the glazing assembly further comprises at least one margining line positioned on the periphery of an inside face of the first substrate, on the periphery of an outside face of the second substrate, or a combination thereof.

Claim 11 (Rejected): The glazing assembly according to claim 1, wherein the glazing assembly further comprises a first peripheral seal in contact with the facing faces of the substrates.

Claim 12 (Rejected): The glazing assembly according to claim 11, wherein the glazing assembly further comprises a second peripheral seal in contact with the edges of the substrates.

Claim 13 (Rejected): The glazing assembly according to claim 12, wherein the first and second peripheral seals are formed by extrusion or encapsulation.

Claim 14 (Rejected): The glazing assembly according to claim 12, wherein the second peripheral seal is flush with the outer face of the first substrate.

Claim 15 (Rejected): The glazing assembly according to claim 12, wherein the first peripheral seal, the second peripheral seal, or the first and the second peripheral seal, at least partly fill an open peripheral groove defined by a recess between the two substrates.

Claim 16 (Rejected): The glazing assembly according to claim 12, wherein the first peripheral seal, the second peripheral seal, or the first and second peripheral seals are

penetrated by connection elements of the active system, at least partly comprise mechanical reinforcement elements, or a combination thereof.

Claim 17 (Rejected): A method of forming an article comprising, forming the article with the glazing assembly of claim 1; wherein the article is selected from the group consisting of a window, a sunroof, a skylight, a display panel, a display case, and a piece of furniture.

Claim 18 (Rejected): The glazing assembly according to claim 1, wherein the glazing assembly passes the safety tests of the ECE R43 and ANSI Z26.1. standards.

Claim 21 (Rejected): The glazing assembly according to claim 1, wherein the glazing assembly comprises at least one transparent substrate of polygonal shape, wherein the at least one transparent substrate is curved or partially curved.

Claim 22 (Rejected): The glazing assembly according to claim 1, wherein the glazing assembly comprises an opaque, opacified or mirror substrate.

APPENDIX II (EVIDENCE)

1. The present specification, referenced in the arguments presented in this brief.

APPENDIX III (RELATED APPEALS AND INTERFERENCES)

None.